

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended). A method for describing adaptive mobile multimedia applications ~~and/or or~~ presentations, whose playback behavior ~~inherently~~ depends on ~~[[the]]~~ a current ~~situation~~ quality of service (QoS) during playback at runtime, the method being based on an XML-based document model and comprising: ~~the step of~~

~~[[-]]~~ describing ~~[[the]]~~ intrinsic adaptation possibilities of application ~~and/or or~~ presentations, which run in a mobile network environment, in an Adaptation Module ~~comprising the vocabulary and~~ including a programming language structure required for describing the adaptation possibilities of said adaptive mobile applications;

playing back an initial continuous media item during the current QoS;

specifying alternative media items to be reproduced when a change in the current QoS during playback prevents the initial continuous media from being played back, said alternative media items being specified with a choose element having a startmode attribute which specifies a playtime at which reproduction is started for a continuous media item of the alternative media items after an adaption to the change in the current QoS; and

after adaption to the change in the current QoS, playing back the continuous media item of the alternative media items according to the startmode attribute instead of the initial continuous media item.

2 (Currently Amended). ~~[[A]]~~ The method according to claim 1, furthermore further comprising: ~~the step of~~

~~[[-]]~~ describing the alternative available media items for the application and/or presentation in a MediaItems Module ~~comprising the vocabulary and~~ including the

programming language structure required for describing the alternative media items used within said adaptive mobile applications.

Claim 3 (Currently Amended). [[A]] The method according to claim 1, ~~furthermore~~ comprising: ~~the step of~~

[[-]] describing [[the]] interaction parameters of the ~~application/presentation~~ application or presentation in an Interactions Module ~~comprising the vocabulary and~~ including the programming language structure required for describing [[the]] interaction possibilities used for said adaptive mobile applications.

Claim 4 (Currently Amended). [[A]] The method according to claim 1, ~~furthermore~~ further comprising: ~~the step of~~

[[-]] describing [[the]] constraints of [[the]] an adaptation process in a Constraints Module ~~comprising the vocabulary and~~ including the programming language structure required for describing constraints for said adaptive mobile application.

Claim 5 (Currently Amended). [[A]] The method according to claim 1, ~~furthermore~~ further comprising: ~~the step of~~

[[-]] changing the programming language structure ~~and vocabulary~~ of [[the]] modules in an Events Module ~~comprising the vocabulary and~~ including the programming language structure required for describing [[the]] event possibilities used in said mobile applications.

Claim 6 (Currently Amended). [[A]] The method according to claim 1, ~~furthermore~~ further comprising: ~~the step of~~

[[-]] describing [[the]] an association between the Adaptation Module and [[the]] a MediaItems Module, represented by a link.

Claim 7 (Currently Amended). [[A]] The method according to claim 1, ~~furthermore~~ further comprising: the step of

[[-]] describing [[the]] an association between the Adaptation Module and [[the]] an Interactions Module, represented by a link.

Claim 8 (Currently Amended). ~~A method for describing a XML-based document serving as a connection layer between a middleware framework supporting mobile adaptive multimedia applications and an authoring system supporting [[the]] generation of mobile adaptive multimedia applications (structure and vocabulary)~~ The method as described in claim 1, ~~characterized in that the description is carried out by means of a language comprising wherein the programming language comprises:~~

[[-]] at least one MediaItems Module serving as a description unit for ~~available~~ the alternative media items within said multimedia applications,

[[-]] at least one Layout Module which organizes said alternative media items into regions on the visual rendering surface of a mobile display device, and

[[-]] ~~at least one the~~ the Adaptation Module ~~which~~ controls a context-aware adaptation of [[said]] distributed multimedia applications by referencing elements of the MediaItems Module.

Claim 9 (Currently Amended). [[A]] The method according to claim 8, wherein the programming language furthermore further comprises:

[[-]] at least one Constraints Module which allows adding additional constraints to [[the]] adaptation description elements, and

[[-]] at least one Events Module which allows ~~to react~~ for a reaction on changes of various resources encompassing user's physical environment (~~location, temperature~~), user's context, quality-of-service (QoS) conditions of the applied networks, and mobile device capabilities.

Claim 10 (Currently Amended). A method for operating a middleware framework supporting [[the]] processing of an XML-based description of an adaptive mobile ~~application/presentation~~ application or presentation according to claim 8, ~~characterized in that~~ wherein said middleware framework allows each running mobile multimedia application to specify [[the]] media [[it]] each running mobile multimedia application wants to use and [[the]] relationships between these media, calculates [[the]] adaptation possibilities of mobile multimedia applications and controls [[the]] an adaptation process ~~in dependent on the~~ current situation.

Claim 11 (Currently Amended). [[A]] The method according to claim 10, ~~characterized by the step of~~ further comprising modifying [[the]] a linking structure between the Adaptation Module and the MediaItems Module ~~in case~~ when the current ~~situation~~ QoS has changed.

12 (Currently Amended). [[A]] The method according to claim 10, ~~characterized by the step of~~ further comprising modifying [[the]] a linking structure between the MediaItems Module and the Layout Module ~~in case~~ when the current ~~situation~~ QoS has changed.

13 (Currently Amended). ~~[[A]]~~ The method according to claims 10, ~~characterized by~~
~~of further comprising~~ modifying ~~[[the]]~~ a linking structure between the Interactions Module
and the Layout Module ~~in case~~ when the current ~~situation~~ QoS has changed.

Claim 14 (Currently Amended). ~~[[A]]~~ The method according to claims 10,
~~characterized in that the~~ further comprising modifying at least one of a document linking
structure ~~and/or the~~ and a document structure ~~and document vocabulary itself are modified by~~
user interactions.

Claim 15 (Currently Amended). ~~[[A]]~~ The method according to claim 14,
~~characterized in that wherein the~~ user interactions, ~~which are used to modify the document~~
~~linking structure and the document itself,~~ are described by ~~[[the]]~~ an Interactions Module.

Claim 16 (Currently Amended). ~~[[A]]~~ The method according to claim 10,
~~characterized by further comprising:~~
dynamically binding media items to a specific region on ~~[[the]]~~ a visual rendering
surface of the mobile display device, said binding being ~~with the aid of the Events Module,~~
initiated by changes of the current ~~situation~~ QoS.

Claim 17 (Currently Amended). ~~[[A]]~~ The method according to claim 11,
~~characterized by further comprising:~~
dynamically binding widgets to a specific region on ~~[[the]]~~ a visual rendering surface
of the mobile display device, said binding being ~~with the aid of the Events Module,~~ initiated
by changes of the current ~~situation~~ QoS.

Claim 18 (Currently Amended). ~~[[A]]~~ The method according to claim 8, ~~characterized by the step of an~~ further comprising:

extending or newly specifying at least one attribute of at least one element of the Layout Module in order to adapt ~~[[the]]~~ a visual component of a specific media item to ~~[[the]]~~ dimension of those regions on the ~~applied~~ mobile display device which are intended for multimedia presentations by scaling ~~scaling-up/scaling-down the~~ a visual size of said specific media item or replacing the said specific media item ~~dependent on the current situation~~.

Claim 19 (Currently Amended). ~~[[A]]~~ The method according to claim 6, ~~characterized by~~ further comprising:

describing the alternative media items of the MediaItems Module used in the Adaptation Module by ~~means of~~ ~~[[-]]~~ media-specific information encompassing bandwidth and size of the visual portion of a multimedia presentation, meta information encompassing ~~[[the]]~~ a name, ~~[[the]]~~ genre, and ~~[[the]]~~ actor of the alternative media items ~~in case of a media item of type video, and/or~~ ~~[[-]]~~ ~~inline information or a reference to external resources by the usage of~~ or Universal Resource Identifiers (URIs).

Claim 20 (Canceled).

Claim 21 (Currently Amended). ~~[[A]]~~ The method according to claim ~~[[20]]~~ 1, ~~characterized by the steps of~~ ~~[[-]]~~ selecting the most appropriate adaptation possibility at start-up time, further comprising ~~[[-]]~~ continuously monitoring ~~[[the]]~~ network conditions, the available mobile device capabilities and/or the user context, and ~~[[-]]~~ selecting the most one of the alternative media items when the current QoS changes ~~appropriate adaptation possibility in case of changing network conditions, mobile device capabilities and/or user~~

context.

Claim 22 (Currently Amended). ~~[[A]]~~ The method according to claim 21, ~~characterized by the step of influencing the adaptation control process by the usage of~~ wherein the selecting includes using priority attributes of the alternative media items ~~supported by the respective elements of the Adaptation Module.~~

Claim 23 (Currently Amended). ~~[[A]]~~ The method according to claim 22, further comprising ~~the step of~~ using a Par Element of the Adaptation Module for defining a simple time grouping in which multiple elements must be played back at ~~[[the]]~~ a same time.

Claim 24. ~~[[A]]~~ The method according to claim 23, ~~characterized in that wherein~~ the adaptation possibilities are calculated with ~~the aid of~~ a Boolean term expressed by a Disjunctive Normal Form (DNF) on a set of different media items, wherein a "~~choose~~" the choose element is considered as an "~~OR~~" OR operator and a "~~par~~" par element as an "~~AND~~" AND operator, from which one conjunction of the Disjunctive Normal Form (DNF), and the adaptation possibility, is selected, depending on the ~~quality of service (QoS) of the applied networks QoS~~, ~~[[the]]~~ mobile device capabilities and ~~[[the]]~~ user context.

Claims 25-26 (Canceled).

Claim 27 (Currently Amended). ~~[[A]]~~ The method according to claim ~~[[26]]~~ 1, ~~characterized in that wherein~~ the "~~startmode~~" startmode attribute can take one of the following values:

[[-]] a "~~restart~~" restart value, which indicates that the media item should always start from the beginning,

[[-]] a "~~resume~~" resume default value, which indicates that the media items should always start from the position it stopped,

[[-]] a "~~laststop~~" laststop value, which indicates that the media item should always start at the media time the last continuous media item contained in the same "choose" element stopped,

[[-]] a "~~playtime~~" playtime value, which indicates that the media item should always start at the time, which is the combined playtime of all media items contained in the "choose" element since the "choose" element is started, and

[[-]] a "~~contplaytime~~" contplaytime value, which indicates that the media item should always start at the time, which is the combined playtime of all continuous media items contained in the "choose" element since the "choose" element is started.

Claim 28 (Currently Amended). [[A]] The method according to claim 27, ~~characterized in that wherein~~ the "~~Adaptation Description Module~~" Adaptation Module supplies the "~~choose~~" choose element with an "~~onremove~~" onremove attribute specifying what happens after a continuous media item is played back.

Claim 29 (Currently Amended). [[A]] The method according to claim 28, ~~characterized in that wherein~~ the "~~Adaptation Description Module~~" Adaptation Module provides the "~~choose~~" choose element with an "~~evaluation~~" evaluation attribute which specifies if [[the]] a content model of [[the]] an element "~~choose~~" choose is evaluated once at start-up time, repeatedly in a specific time period or continuously while playing back the

multimedia presentation.

Claim 30 (Currently Amended). ~~[[A]]~~ The method according to claim 28, ~~characterized in that wherein the "Adaptation-Description Module"~~ Adaptation Module provides the ~~"choose"~~ choose element with an ~~"empty"~~ empty attribute which supports ~~[[the]]~~ a functionality that ~~[[the]]~~ a set of media appropriate for ~~specifie the current situation~~ QoS can be empty.

Claim 31 (Currently Amended). ~~[[A]]~~ The method according to claim 30, further comprising evaluating ~~characterized in that the evaluation of the~~ an associated priority of an adaptation possibility ~~is done~~ by sorting all children of a par element according to their priority, merging ~~[[the]]~~ configurations of ~~[[the]]~~ a first two child elements by ~~means of an~~ "AND" AND operator in such a way that ~~[[the]]~~ priority of ~~[[the]]~~ resulting configurations ~~consist of the~~ includes a priority of ~~[[the]]~~ a higher prioritized child appended with ~~[[the]]~~ a priority of ~~[[the]]~~ a lower-prioritized child, and repeatedly merging ~~[[the]]~~ a result with all other children of the par element.